

IN THE SPECIFICATION

Please substitute the following paragraphs where indicated, the following paragraphs containing amendments by markings, for corresponding paragraphs in the specification as originally filed.

At Pg. 4 line 20:

Where water having dissolved ozone gas therein is poured into a body of water such as, for example, a swimming pool, the ozone beneficially reacts with various contaminants. For example, ozone rapidly reacts with metal ions within the water, forming precipitants which may be removed through filtration. Ozone dissolved in water also degenerates or causes lysis of the cell walls of bacteria, viruses, protozoan organisms algae and other microbiota. However, while ozone kills bacteria and viruses almost instantly, protozoa such as those that serve as hosts for bacteria that cause Legionnaires disease require longer exposure to higher concentrations of ozone in order to be killed. Ozone within water also beneficially oxidizes and neutralizes sulfides, nitrates, chloramines, cyanides, detergents, and pesticides. In all such cases, the efficacy of ozone in reacting with such contaminants is enhanced by reducing the physical distance between contaminant organisms or molecules and the molecules of ozone within the water. In a large volume of water, such as a drinking water storage tank, spa, or swimming pool, the concentration of dissolved ozone becomes undesirably low, slowing the rate at which the ozone reacts with contaminants. To prevent such dilution of ozone concentration, it

is desirable to first introduce the ozone-carrying water into a reaction chamber having a smaller interior volume which maintains higher concentrations of ozone.

Pg. 8 line 5:

Referring now to the drawings, and in particular to Fig. 1, the instant inventive assembly for purifying water is referred to generally by reference arrow 10. The major components and compartments of assembly 10 may be, but not necessarily, be constructed integrally with or housed within a rigid casing 12, with access thereto provided by making one side removable. Such a casing 12 may be rectangular or square, as seen from a side, and relatively narrow in width so as to be conveniently mountable within a spa or hot tub enclosure. In this application, a casing [an enclosure] about 18 inches high has proved to function well. For other applications, the configuration as shown and described conveniently compartmentalizes the assembly 10 for use in conjunction with pool plumbing systems, spa plumbing systems, drinking water systems and other similar applications. Conveniently, the compartments may be formed by a linear extrusion process where the extrusion is cut to length and capped on each side [at each end]. In this instance, the internal structures for directing water flow are inserted from ends of the compartments, and may be mounted to the end caps.

Pg. 8 line 21

Referring further to Fig. 1, assembly 10 is shown having a number of compartments 14, 16, 18, 20, 22 and 24, each of these compartments communicating with adjacent compartments via openings at tops and bottoms thereof so that the flow of water, as indicated by arrows, traverses the full length of each compartment. As shown in Fig. 1a, those compartments wherein water is flowing upward may be larger in cross section or diameter, and compartments wherein water flows downward may be smaller in cross section or diameter. Here, where the flow is upward, the flow is slower, allowing ozone in the bubbles a longer time to dissipate in the water. In those compartments where the flow is downward against the natural buoyancy of the bubbles [gravity], the compartments are smaller with a corresponding increased flow of water that entrains the bubbles in a faster, more turbulent flow. Initially, compartment 14 serves as a contact chamber wherein bubbles containing ozone are first exposed to the water. Where compartment 14 is larger, (Fig. 1a), the contact time is more prolonged. In addition, particular structures located in the compartments where the flow is downward or at entrances/exits thereof ensure that water flow is turbulent.

Pg. 11 line 21:

At a top of chamber 22 is a water outlet/inlet 54 that passes the flow of water to the last compartment 24. Structure herein is similar to that shown and described in Applicant's pending application number 09/418,915, filed 10/15/99, and which is incorporated herein in its entirety by reference. Such

[This compartment 24 is provided with] structure [that] removes entrapped air from the flow of water. Here, at a top of chamber 24 is a solenoid valve 54 that operates in conjunction with a water level sensor to 56 and, in some instances, a valve 58 is positioned at an outlet 60 of assembly 10. A small drain chamber 55 may be provided in the vent line after valve 54 and order to trap and drain small amounts of water expelled through valve 54. Operations of valves 54, 58 and sensor 56 may generally be such that when sensor 56 detects a lowered water level indicative of a gas buildup within compartment 24, a signal is sent to valve 54 to open this valve, thus venting the gas. In instances where the water system is pressurized, water pressure forcefully expels the gas through valve 54. In some of these pressurized systems, where the water pressure is sufficiently high to expel gas through valve 54, valve 58 may be omitted. In instances where the water pressure is somewhat lower, a small constriction may be provided at an exit 60 in order to cause the gas to be expelled through open valve 54. In other of these pressurized systems where valve 58 is installed, valve 58 may be closed when valve 54 is opened. In this instance, pressure in the system increases to more forcefully expel gas through valve 54. In any instance, after the water level rises (due to the gas is being expelled) to a preset point where the water level almost reaches valve 54, sensor 56 closes valve 54. In order to prevent gas buildup in compartments with low flow rates, such as compartment 14, a small vent line may be installed from the top of the compartment to a top of compartment 24. This line would be sized so as to readily vent gas, but not allow passage of a significant quantity of liquid to pass

therethrough.

pg. 13 line 11:

Still referring to Fig. 1, another feature of Applicant's invention may include premixing ozone gas with another sanitizing compound prior to insertion of the mixed compounds into the flow of water. Here, a venturi injector 62 similar to a venturi injector as shown and described in Applicant's pending application number 09/393,437, and which is incorporated herein in its entirety by reference. This venturi 62 is conventionally provided with a water inlet 63 and a water outlet 65 through which a motive flow of water (as indicated by arrows) is pumped by a water pump (not shown). Venturi 62 is also provided with an annular cavity 65 (diagrammatically illustrated in Fig. 1) which in turn communicates with at least two sanitizer injection port 64 and 66. As shown, port 64 may be coupled to a canister 68 having a removable top 70 within which a solid, slowly dissolving form of sanitizer is placed at appropriate intervals. An inlet line 72 provides a flow of water from the motive flow to canister 68, where the sanitizer is dissolved into the water, and an outlet line 74 provides the water containing the dissolved sanitizer to inlet port 64. Inlet port 66 of the venturi is coupled to an outlet to 76 of enclosure 50 through which air is circulated around ultraviolet tube 52. To accomplish this, an inlet tube 78 is provided to enclosure 50. And air filter 80 may be coupled in line 78 to filter particulates from air circulated through enclosure 50. In some instances, an air pump 82 may be also placed in line 78 to pump air

through enclosure 50. In any case, ozone-containing air from enclosure 50 is provided to port 66 of venturi 62, where the ozone-containing air is mixed with the sanitizer-containing water from canister 68 in annular chamber 65 of venturi 62. Alternately, any liquid sanitizer dispenser may be used, such as a liquid dispenser that dispenses a liquid containing a halogen or other sanitizer.

Pg. 15 line 4:

The outlet portion 92 is provided on an external side with inlets 64 and 66 for supplying sanitizers to the venturi. This may be the same sanitizer applied to each of inlets 64, 66 or dissimilar sanitizers may be applied to inlets 64, 66 as described above. In the latter instance, the dissimilar sanitizers are at least partially mixed prior to being introduced into the water flowing through the venturi. Of [If] course, inlets 64, 66 may be located on the inlet portion 90 with appropriate modification, a should be apparent to one skilled of the art. Inlets 64, 66 each communicate with respective cavities 108, 108a, these cavities provided with stepped regions 110, 110a where these cavities are reduced to a smaller diameter. Within these smaller diameter areas the cavity is tapered as shown toward inlet bores 64a, 66a and the respective openings through which sanitizing compound flows. Within these smaller-in-diameter and tapered portions of cavities 108, 108a disks 112, 112a of a thin, flexible material are placed, these disks serving as check valves to allow only a one way flow of sanitizer through inlets 64, 66. As these disks 112, 112a must move slightly within their cavities, the cavities are constructed slightly thicker and

larger in diameter than the disks. For holding disks 112, 112a in place, plugs 114, 114a are provided, as particularly shown in figures 5 and 6. These plugs are sized to snugly fit as shown into the larger portions of cavities 108, 108a and loosely hold disks 112, 112a in place. These plugs each are provided with a series of ridges 116 forming a plurality of grooves 118 in faces of the plug facing disks 112 (dashed lines and Fig. 5). As such, when sanitizer is flowing through the inlets 64, 66, the disks are moved away from the internal openings of the bores 64a and 66a and generally pressed against the grooves of plugs 114, 114a. As the disks are smaller than the radial extent of the grooves 118, sanitizer flows around the disks, into grooves 118 and through a central opening 120, 120a in the plugs. Openings 120, 120a in the plugs communicate via slots 100, 100a with annular mixing chamber 102, where the sanitizers are mixed and drawn into the venturi interface.